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friendly people after an absence of four weeks, and felt grateful for our safe return from a journey of much fatigue and anxiety, not unattended with danger, and in which we had the gratification of knowing that we were the first Europeans who in modern times had traversed the whole extent of the Wádi, from the Dead Sea to 'Akabah, and have proved that, in the present state of things, the river Jordan never could have flowed into the Ælanitic Gulf. On the following day we returned to Hebron.

[It is due to M. de Bertou to state that the above account has been very much abridged from his detailed narrative, in which he gives a very minute itinerary, with compass-bearings nearly every quarter of an hour. These have been made use of in laying down his route in the accompanying map. M. de Bertou also gives some barometric, and several thermometric observations, in order to determine the elevation by the temperature of boiling water; but, as he himself states that his instruments were out of order, it is thought better to omit the results. M. de Bertou's original MS. is preserved in the library for reference.]

XI.—*Extract from a Notice on the Site of Ancient Tyre.* By the Count J. DE BERTOU.

Beïrút, 21st November, 1838.

IN addition to the account of my journey from Jerusalem to 'Akabah, I have now the pleasure to present to the Geographical Society of London the result of my researches concerning the site of ancient Tyre. My inquiries were based upon a series of questions proposed to me by M. Poulain de Bossay, of the Geographical Society of Paris,* and I hope some light may be thrown by them on the archæological and historical discussion raised in the learned world on the subject of the ancient metropolis of Phœnicia.

Perfectly aware of the difficulty which exists in making ancient topographical researches without the assistance of an exact representation of the ground, I hoped to do a useful thing in surveying and measuring, with great exactness, the contours of the peninsula upon which the village of Sûr is now built, accompanying this plan, made on a large scale, with a second, indicating both the respective positions and distances of the different localities which may have given rise to discussion.

* Bulletin de la Société de Géographie. Janvier, 1838, p. 47.

The questions that I intend to examine are these:—

I. On which point of the continent stood the first city of Tsúr or Şúr, founded by the Sidonians 240 years before the construction of Solomon's Temple?

II. Does the little peninsula upon which modern Şúr is built include all the island upon which Tyre stood before Alexander's conquest?

III. Could the harbours which exist now, even in restoring them to their ancient limits, be sufficiently large for such a maritime power as Tyre?

Following the order of these questions, I will examine, first, where is Şúr to be placed; and if I can only arrive at probabilities, the insufficiency of my researches will be fully explained by the words of the prophet Ezekiel: "Though thou be sought for, yet shalt thou never be found again, saith the Lord God." xxvi. 21.

[I. On a comparison of various passages of ancient writers, M. de Bertou is of opinion that the most ancient city of Tyre was on the continent around, and upon an eminence now known by the name of Marshúk, where are still some large pieces of rose-coloured granite columns, at a quarter of an hour's distance from the island of Şúr, in which island was formerly the temple of Jupiter Olympius. This temple, according to Dio, was joined to the city by Hiram, son of Abibalus, by raising a causeway. The causeway was again destroyed by the Tyrians in the reign of Nebuchadnezzar, when *they put the sea between them and their enemies* to escape from his arms; and from that time till the conquest of Alexander the inhabitants of Tyre confined themselves to the island.]

II. Does the little peninsula upon which modern Şúr is built include all the island upon which Tyre stood before Alexander's conquest? After having measured the peninsula, I came back to Beirút, and there having collected all the historical information that I could procure respecting Tyre, I again asked myself the question, how could the narrow space that I have measured possibly afford room for a city so powerful as Tyre? In turning to Rollin's description of the siege of this city by Alexander, I was struck by the passage in which the historian informs us that the besiegers "*avaient réparés le pied de la muraille de grosses pierres pour en empêcher l'abord*" (Rollin, vol. vi. p. 101); and that when the assailants had taken away these stones, the base of the wall being cleared, the ships could easily approach. Now, at the present day, the peninsula is so surrounded with shoals and rocks that the smallest boat cannot approach it: if the same obstacles had existed in the time of Alexander, this "*remparement*" of the walls would have been superfluous, and the galleys

of the besiegers could never have come to the foot of the ramparts. This passage opened a door to the probability of an interesting discovery, and I began to think that Maundrell had concluded justly in supposing that the greatest part of the island which Alexander besieged is now under water. I saw a further probability in favour of this supposition in the quantity of pillars which are found upon a rock on a level with the water (*vide* plan No. 9), and for the existence of which on this place I cannot account but upon the hypothesis, that what is at present a shoal was formerly part of the town, and that these columns belonged to a monument, the lighter materials of which, as well as the earth which covered the rock, were swept away by the sea, or rather "scraped," according to the word of the prophet Ezekiel; "I will also scrape her dust from her, and make her like the top of a rock." (ch. xxvi. 4.) This conjecture once formed, I mounted my horse and returned to Şúr, in order to arrive at a certainty, and thereby confirm or destroy it. Again on the spot, I took a boat, and soon found, both by repeated soundings and by information furnished by my guides (divers), that a bank of rock existed, which I have indicated on the plan by a grey tint. I do not think that it is venturing too far into the field of conjecture to suppose that this bank of rock, now under water, anciently formed part of the islands which were inhabited after Nebuchadnezzar had destroyed the town situated on the continent. So that the word of the prophet is again literally accomplished.

III. The third question which I have proposed to myself is this: Can the harbours which now exist, even on restoring them to their ancient limits, have been sufficiently large for such a maritime power as Tyre?

As I have already observed, it is impossible, on visiting the peninsula upon which the miserable village of Şúr is constructed, not to be struck with the contrast presented by the narrowness of its limits when compared with the grandeur and power of the city which was the parent of Carthage and Cadiz, and whose lofty walls arrested for so long a time the conqueror of Asia. But if the traveller cannot understand how so powerful a city could be crowded into so narrow a compass, his astonishment is still greater when, after having in vain sought for the ports necessary to shelter the innumerable vessels which covered the sea, he only finds miserable basins, which could never have contained more than 250 or 300 small galleys. In the face of such facts one is compelled to doubt the exactness of historians, or to seek by conjecture to reconcile their narratives with the truth. If the discovery of the ledge of rock, which I have before spoken of, the height of the houses of Tyre mentioned by Strabo, and the very natural supposition that this city possessed considerable settlements on the continent, account for the small extent of the actual peninsula,

the other problem still remains to be solved—where are the ports which sheltered the innumerable vessels of this rich emporium?

Perplexed by this difficulty, I ardently sought for a solution, which I did not think afforded either by the extent of the limits of the northern port, as indicated on the plan by red dots, or by the discovery of the southern basin, which appears to me to have been used rather for the construction of galleys than to serve as a port, unless the wall of 25 feet thickness, which incloses it towards the sea, be the remains of that inclosure of 150 feet in height which surrounded Tyre when Alexander came to besiege it; and that the space comprised between this wall and the present shore formerly constituted a part of the city. The shallowness of the basin, and the great quantity of pillars and other materials which are seen under water, render this last supposition in some degree probable. Where, then, is the southern port, designated by Strabo under the name of the Egyptian port? I think I have found it. The sponge-divers, who lent me their boat to visit the shoals which encompass the peninsula, informed me of the existence of a submarine bank which extends to a distance of 2 miles in a S.S.W. direction towards Cape Blanco: this bank being covered by water to the depth of 1 to 3 fathoms, it was impossible for me to ascertain whether it is natural or artificial; that it exists is certain, and that it continues at least 2 miles in a perfectly straight line. I could perceive the bank very distinctly, especially by throwing oil on the surface of the water, and I estimate its breadth, which appeared to be always the same, at from 12 to 14 yards. If this embankment (*digue*) be artificial and was constructed to form a port, there is no longer any exaggeration possible as to the power of the Tyrians, and the riches of their commerce are attested by this great fact. The space comprised between the shore and this bank would form one of the largest ports known. In order to arrive at a certainty it is necessary to have a diving-bell at my disposal. I have requested the President of the Geographical Society at Paris to petition the Minister of Marine to cause the necessary instruments to be put on board the first ship of war which may come to this coast: then it would be easy to verify the fact. If this bank be artificial, or being natural, if it bear traces indicating that it has served as a foundation for a mole, the discovery appears to possess so high an historical interest that I hope, when known in Europe, some of the powers who may have vessels in the Mediterranean will furnish me with the means of verifying its exactness.

Shoals extend for $\frac{1}{2}$ a mile to the north of the peninsula, and form a roadstead, in which the ships that now come to *Şūr* anchor: may not a wall have existed also upon these rocks, and have formed a northern port nearly similar to that of the south? These two long moles projecting to the right and left of the island

would correspond perfectly with the following simile, which I find in an Italian translation of *Telemachus*, and which probably may have been furnished to the Archbishop of Cambray by an historical document :—"Due gran mola simili a due robuste braccia, avanzandosi nel mare, formano un porto, a cui non può recare oltraggio l'impeto de' venti." If this phrase be not a mere figure, it is perfectly descriptive of the two moles, which I have supposed to have existed, and cannot be applied to the small ports, which, far from advancing into the sea like two vast arms, are, on the contrary, indented and almost invisible.

The most minute researches did not enable me to discover any inscription among the ruins of Tyre; I learnt from old men of the country that several marble tablets covered with Frank characters had been removed to 'Akká by Jezzár Páshá when he built his great mosque; and the Arabs, who have a vague idea of the celebrity of the place which they inhabit, added, that these inscriptions were of the time of Alexander. Another *stèle* was carried off, they informed me, a short time ago, by an Austrian ship-of-war. But information given by Arabs is entitled to very little confidence. I have often experienced this, and very recently I uselessly made a journey of 36 miles in search of an inscription at Rás-el-Musherref, where I found nothing but an uneven surface of rock, discoloured by the action of the sea-water. I mention this circumstance, because it may save a fruitless journey to other travellers who might be disposed to allow themselves to be carried away as I was, by the hope of a discovery.

Except some pillars of grey granite, the greatest part of which are under water, few ruins are seen at Tyre. Alexander, in building the causeway, accomplished the words of Ezekiel, chap. xxvi. v. 12, "And they shall lay thy stones, and thy timber, and thy dust, in the midst of the water." So that all contribute to efface the vestiges of this city, which is to be "sought, not found." It is hardly a century since Maundrell said, "You see nothing here but a mere Babel of broken walls, pillars, vaults," &c. At this day these walls and vaults have disappeared under the sand which is constantly thrown up by the sea, and which would entirely bury the town but for the precautions the inhabitants take every year to secure the ground they occupy against its encroachments.

Altogether the prophecies against Tyre have been accomplished, even to the minutest details, and the best description of its actual state is that given by the prophets themselves.

The numbers of the *Journal des Savants*, of Nov. and Dec., 1835, contain two articles by M. Letronne, in which he critically examines the latest researches on the situation of Carthage by Capt. de Falbe and M. Dureau de la Malle; I find therein striking points of resemblance between the colony and its metropolis: and it may not be without interest to show that the founders of Car-

thage were guided by recollections of their country, both in the choice which they made of the site of the city and in the works which they executed. Tyre was first built upon the peninsula formed by the continent before the junction of the island with it by the causeway of Alexander, and this favourable situation procured for this city secure and large ports (Rollin, vol. vi. p. 90). Carthage was also built upon a peninsula, and the following words, borrowed from Appian, are equally applicable to Tyre and Carthage:—‘ Carthage was situated at the extremity of a gulf, and greatly resembled a peninsula’ (App. Bell. Pun. ch. 95). Tyre had two ports; if they were formed by the two great moles of which I have spoken, they must have communicated by the strait which Alexander filled up. If these two ports were only the two basins represented on the plan, I am of opinion they must have passed from the northern to the southern port by the canal which separated the two islands, these two ports would have the same narrow entrance which we know was closed by an iron chain. Appian, speaking of the two ports of Carthage, says: “ The ports were so situated, that it was necessary to pass from one into the other, and that there was but one entrance for both on the side of the sea; this was 70 feet wide and closed by iron chains.” By a remarkable coincidence, both Alexander and Scipio constructed large causeways, the former to seize upon the mother, the other to reduce the daughter; and the inhabitants of the two cities, alike despising these works, at first supposed them to be impracticable, and only commenced any opposition after they had witnessed their success. This parallel might be pushed much farther, but I confine myself to pointing out such circumstances as appear to me most striking.

Although I fear I have already exceeded the limits of a letter, I cannot close my observations upon Tyre without mentioning the hydraulic works which the ancients executed at Rás-el-'Ain, and noticing the prodigious quantity of water furnished by the different sources or subterraneous channels, the produce of which, confined in reservoirs, acquires a level sufficiently elevated to flow against the natural slope of the ground by means of aqueducts, which still exist as far as Marshúk.

There still remain at Rás-el-'Ain seven reservoirs which furnish water: I will state in a separate note the dimensions of each. The water of the principal basin has been, and still is, employed as a moving power, as is shown by the construction of the basin itself; but one may perceive that it has also been carried by a watercourse to the basin which still supplies the aqueduct which went to Tyre, but at present stops at Marshúk after passing through the rock of that name. The dimensions of the channels correspond to the greatness of the city which it was to supply. An interesting question presents itself on the subject of this

aqueduct : as I have just said, it stops at Marshúk, *i. e.*, at 2700 yards from Šúr ; but it may be traced by the ruins, which are not yet covered by sand, to the towers marked on the plan by No. 19. These towers cover reservoirs of fresh water, which amply supply the wants of the 1200 inhabitants of the town, and also suffice to water the gardens around.

Volney supposes that the water is carried there by a subterranean channel wrought in the foundation of the aqueduct ; I thought so myself for a moment, but a circumstance, which I had not observed at my first visit to Marshúk, appeared to destroy this opinion. In modern times a sugar-mill has been constructed on that site, and precisely at the spot where the aqueduct is interrupted a cave has been dug to receive the mechanism of the mill ; this cave would have met the subterranean channel if it had been made in the foundations of the aqueduct, and if so, the water would no longer have reached Šúr. I have in my possession two bottles of water, one taken at Rás-el-'Ain, and the other at the reservoir at Šúr, which I will cause to be analyzed ; as to the temperature, there was 1° of difference in the two places. At Rás-el-'Ain, 2 o'clock, P.M., the temperature of the air being 82° Fahr., that of the water 68°. In the reservoir at Šúr, temperature of the air the same, of the water 67°.

The temperature of the air being more elevated than that of the water of the reservoirs at Rás-el-'Ain, it does not appear to me probable that this water is the produce of wells obtained by boring as several travellers have supposed, since a number of facts prove that the temperature of such wells is always higher than that of the surface of the earth.

Both Mr. Moore, the British consul at Beirút, who accompanied me to Tyre, and myself, bought from the Arabs several intaglios of pretty good workmanship ; my travelling companion possesses a Hercules beautifully executed, but the head of which is unfortunately a little damaged, and also a scarabæus of white agate in perfect preservation, bearing an inscription in Phœnician characters terminated by a date. I also purchased besides some coins, a Minerva Medica of fine workmanship and in perfect preservation, and a head, which from the features and the Phrygian bonnet, I fancy to be that of Æsop, and lastly, a Cupid, whose particular attributes I cannot make out.

A felláh of Šúr some time ago found a marble torso of a young man ; although the workmanship is not bad, it did not strike me as sufficiently good to merit a place in an European collection.

I have much pleasure in acquainting you with a discovery of a monument which affords a fresh confirmation of the accuracy of Herodotus respecting the expedition of Sesostris. Reading a short time ago this learned historian, I came to the following passage, after several paragraphs upon the same subject :—" La

plupart des colonnes (*stèle?*) que Sésostris fit élever dans les pays qu'il subjugué ne subsistent plus aujourd' hui. J'en ai pourtant vu dans la Palestine de Syrie, et j'y ai remarqué les parties naturelles de la femme, et les inscriptions dont j'ai parlé plus haut."

This obscene representation, which indicates the cowardice shown by the people in the defence of their territory, brought to my recollection that I had heard of the existence of similar representations in this neighbourhood, but which were attributed to certain rites of the Anšáries. I thought I remembered that it was on the rocks of the Necropolis of 'Adelún they had been seen, and the following day at 3 o'clock in the morning, I rode thither with the hope of finding both these emblems and some monuments of Egyptian workmanship, which might attest their origin : at 4 o'clock in the afternoon I arrived at the monument described by Herodotus.

I visited with great care the whole of the Necropolis without finding any other sculptures than that alluded to. I may remark that the frame of this monument differs entirely from those of Nahr-el-Kelb, and does not bear, as they do, the emblem of a winged globe. Although the inscription on the above monument is very indistinct, I can affirm that it is written hieroglyphics. The rock of 'Adelún is hard and of a grey colour; in a word, similar to that of the defile at Nahr-el-Kelb; and if this monument is more defaced than those which are better preserved in the latter place, it is to be attributed to its being less sheltered, and more exposed to the westerly winds which prevail on this coast. The Necropolis of 'Adelún is situated 3 hours to the N. of Tyre, and the river Kásimiyeh (Leontes) flows at about an equal distance between these two places. Between the rock where the subterranean excavations exist and the sea, there is a plain of about 850 yards wide, covered with ruins which attest the existence of a city. Several names being rudely engraved on the rock in Greek characters, as well as Greek and Latin crosses on some of the tombs, I am led to suppose that it was inhabited by Christians. The Egyptian *stèle* is situated 50 paces to the N. of a cavern which the traveller cannot fail to perceive in following the road from Sidon to Tyre. The Necropolis of 'Adelún contains more than 2000 excavations; all those which I entered were made to receive three bodies; the furthest compartment, being probably reserved for the head of the family, is invariably larger than those at the sides.

I sought in vain on the rocks and in the tombs for the allegorical images seen by Herodotus; but I have just learnt that those of which I had been informed, exist at a small distance (towards the S.) beyond the place where I discovered the Egyptian *stèle*, and that they cover the sides of a small temple cut in the rock

and in which is still seen an altar, and an inscription in Greek characters, probably the dedication of the temple to Venus. I shall not fail to visit with care this monument. Would it not be curious to find there some vestiges of Egyptian sculpture which would give to the allegory of which I have before spoken an origin which was probably unknown to those who wrote the Greek inscription?

To what city did the Necropolis of 'Adelún belong? It could not be Sarepta, whose name is preserved in that of Šarfand, a little Arab village, the position of which is well known. The city of Leontopolis must have been on the banks of the Leontes, where ruins are still seen; the Necropolis then must have depended on Ornithopolis, which Strabo places between Sidon and the Leontes.

References to the Plan of Šúr.

1. Bogáz, or entrance of the port, now obstructed by columns.
2. Forts.
3. Wall which enclosed the port.
4. Second wall or breakwater.
5. Space, thirty yards wide, in which are many columns under water.
6. Fort, with a pharos (built by the Crusaders?)
7. Rocks on part of which the wall is built.
8. Column of beautiful rose-coloured granite.
9. Rocks and many grey granite columns. Line of a wall of circumvallation, amongst the ruins of which there is a considerable quantity of broken pottery; it extends from No. 7 round the coast to 16.
10. After excavating at this spot to the depth of nearly four yards, through ruins, I reached a pavement of slabs so large that I could not succeed in moving them.
11. Small hills, rising about four yards above the general level of the ground, which is about two yards above the sea.
12. Appears to be the highest point of the peninsula.
13. Hypogeum (square chamber, five yards by four).
14. Sarcophagus.
15. Granite column, still standing.
16. The stones which formed the base of the wall have marks which show that they were connected by iron cramps.
17. Two masses of masonry covered with sand. The space between them probably formed a landing-place.
18. Numerous columns on the beach and in the sea, possibly the site of the Temple of Hercules.
19. Square towers, above tanks of fresh water used by the inhabitants.
20. Port or building-dock, with 6 feet depth of water.
21. Walls nine yards wide, rising a little above the surface of the water, and usually taken for rocks. The external part of the walls is of fine broad stones, the interior of rubble and broken pottery.
22. Gate of the town.
23. A great number of columns under water.
24. Islets on the level of the sea.
25. An embankment or bank under water, extending 2 miles in a S.S.W. direction.
26. Columns of grey granite, marking the site of the Cathedral built by St. Eusebius.
27. Rocky bank which extends west one mile, with fourteen fathoms water at its outer extremity.
28. Angle of the ancient wall of circumvallation, probably the limit of the island?
29. In digging between these two lines, salt water is found at 6 feet depth.
30. Sandy bottom, with from 6 to 8 fathoms water, throughout the space comprised between the bank and the beach.